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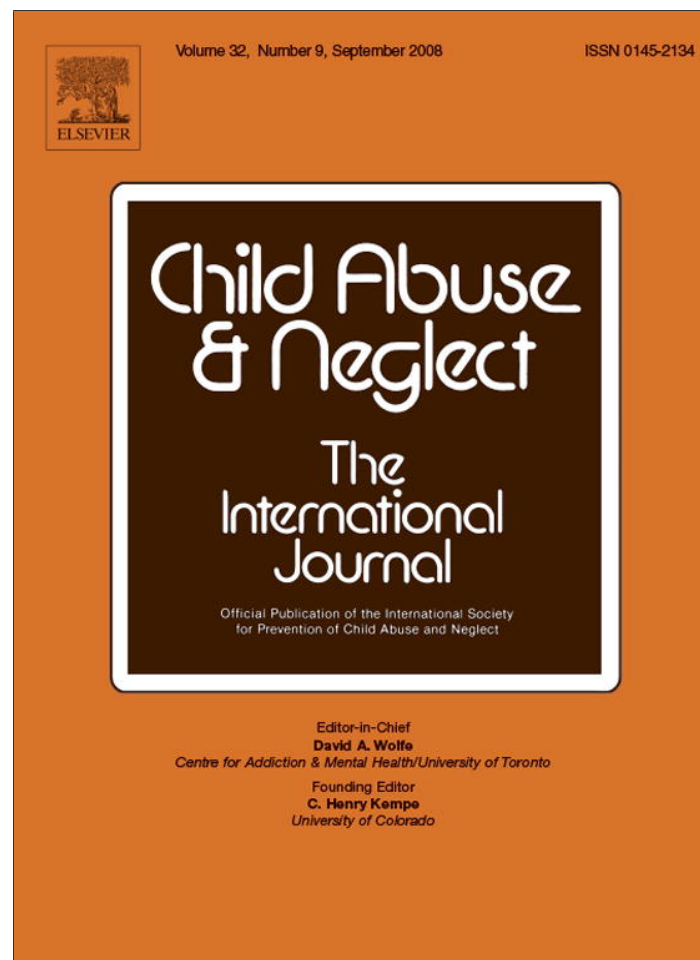
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Child Abuse & Neglect



Brief communication

Detection of child abuse by Dutch preventive child-healthcare doctors and nurses: Has it changed?☆

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Introduction

Child maltreatment (i.e., abuse and neglect) is a major cause of child morbidity and death. UNICEF estimates that it leads to 3,500 deaths annually in member states of the Organization for Economic Cooperation and Development (OECD), constituting an annual mortality rate of 6.1 per 100,000 (UNICEF, 2003). Furthermore, the total number of cases of maltreatment is probably 150–2,000 times higher than the number of deaths (May-Chahal & Cawson, 2005; Scher, Forde, McQuaid, & Stein, 2004; Theodore et al., 2005; UNICEF, 2003). Risks of death from maltreatment are found to be highest in infants and then gradually decrease to the point where they are mostly replaced in adolescence by other sources of violence (Jenny & Isaac, 2006; UNICEF, 2003). These decreasing death rates by age may not fully reflect decreasing rates of maltreatment, however, because the likelihood of fatality in cases of maltreatment is probably highest among the very young (UNICEF, 2003). Evidence is now growing that in addition to its short-term effects, child maltreatment also has major long-term adverse effects (Dubowitz & Bennett, 2007). Examples of these effects include a higher likelihood of smoking and substance abuse (Newton & Vandeven, 2005), of adverse psychological symptoms (Briere & Elliott, 2003), and of a number of adult diseases such as ischemic heart disease, chronic obstructive lung disease and cancer (Felitti et al., 1998).

Attention to child maltreatment is growing among child-healthcare professionals (Dubowitz & Bennett, 2007). An example of this is that professional associations in several countries have issued protocols both on the detection and on the management of child abuse (AAP, 2001; Baeten, 2002; Kairys et al., 1999; Narayan, Socolar, & St Claire, 2006). In addition, between 1998 and 2003 the percentage of US pediatricians who thought that screening for domestic violence should be incorporated in routine health examinations increased from 66% to 72% (Trowbridge et al., 2005).

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In the Netherlands, the preventive child-healthcare system offers an ideal opportunity for the early detection of child maltreatment because it reaches virtually all children. In this system, child health professionals (henceforth: CHP), comprising child-specialized doctors and nurses, offer routine well-child clinics free of charge, based on a legally endorsed national scheme (Minister of Public Health, 2001), which includes the early detection of adverse child environments (Brugman, Reijneveld, Verhulst, & Verloove-Vanhorick, 2001; Reijneveld, Brugman, Verhulst, & Verloove-Vanhorick, 2004). For all ages, coverage is more than 95% of the total population (Minister of Public Health, 2001). Since they are mainly preventive, these services do not provide treatment except for short-term parenting support, in contrast to the system found in many other countries, including the USA, where preventive child-healthcare is embedded in the general setting of community pediatrics.

In the Netherlands, national guidelines for the detection of child abuse were issued in December 2002, aimed at all professionals working with children (Baeten, 2002). They were disseminated with a great deal of publicity to all preventive child-healthcare organizations. There were four main points to these guidelines. First, in any case of suspicion of child maltreatment, the facts underpinning the suspicion should be registered systematically and, if possible, these facts should be discussed with the child and its caregivers. Next, these suspicions should be shared with colleagues and with the regional child protection service ("Advies- en Meldpunten Kindermishandeling," AMK), and should lead to a working plan. The AMK has regional services throughout the country, which anyone suspecting child maltreatment can contact. Third, further investigation should be initiated, such as additional interviewing of the child and additional diagnostics. Finally, additional childcare and legal procedures should be initiated in cooperation with the AMK service. The fact that these guidelines were issued reflects the growing attention now being paid to child maltreatment among professionals (Schoenmakers, van Veen, Lindemann, Mehlkopf, & van Bostelen, 2006), including those in preventive child-healthcare.

Because of this growing attention, one might assume that there has been an increase in the rate of detected child maltreatment in Dutch child preventive healthcare, leading to the issuing of such guidelines. However, in reality little is known about any trends in the actual detection of suspected child abuse and neglect in community preventive health services. The aim of this paper is to provide information about these trends and about those characteristics of parents and children that might increase the likelihood of detection.

Methods

In a standardized way, trained CHPs registered data on child maltreatment for two national community-based samples of children in 1996/1997 (ages 2–12 years) and in 2002/2003 (ages 14 months to 12 years). Data were collected from October till May in both periods, using an identical methodology of the Dutch national child-healthcare monitoring system (Brugman et al., 2001; Reijneveld, Brugman, et al., 2004; Reijneveld, van der Wal, Brugman, Hira Sing, & Verloove-Vanhorick, 2004) and with the same supervisor (SAR).

Samples

Both samples were obtained by means of a two-step procedure. In the first step, a random sample of all child-healthcare services was drawn, after stratification by region, by degree of urbanization of their district and by ethnicity. The number of participating child-healthcare services varied per age group from 16 to 20 in 1997/1998, and from 12 to 15 in 2002/2003; in addition, due to mergers, the average size of these services had increased during this 5-year period. In the second step, each clinic was asked to provide a random sample of about 75 children in 1997/1998, and 100 children in 2002/2003, for each of several age groups included in the national well-child visits program. Preschool children (in the Netherlands, those under the age of 4) were selected from the clinics' lists per age group (variation allowed in months between brackets): 14 months (± 2 months; only in 2002/2003), and 3 years and 9 months (± 3 months), using random numbers (Reijneveld, Brugman, et al., 2004; Reijneveld, van der Wal, et al., 2004). For school-aged children each child-healthcare service provided a sample for each of two grades (second grade and one grade in the range 5–8 of primary school) (Brugman et al., 2001). Since they were anonymous, we cannot know the exact proportion, but relatively few of the CHPs are assumed to have participated in both studies.

Response rates were high, 92% in 1996/1997 (number of respondents (n) = 3,781), and 84% in 2002/2003 (n = 4,479; out of these 3,607 aged 3(1/2) to 12 years). After correction for stratified sampling, the samples were representative for the entire Dutch population in terms of income, type of family and parental educational level. Both studies were approved by the relevant medical ethical committees, including verbal informed consent by the parents.

Procedure

CHPs checked the medical histories of each child in their child-health records, performed a routine interview with the child and its accompanying parent or other caregiver, and also conducted a physical examination. Based on this and using a pre-coded registration form, they registered data on the background characteristics of the child and its family, and on the occurrence of any mental or social problem (designated as a psychosocial problem). For psychosocial problems, after each assessment they filled out the following question: "Does the child have a psychosocial problem at this moment?" (yes, no) and scored the type of identified problem(s) on a pre-coded list, which included those categories related to maltreatment. For both periods, physical neglect, physical abuse and sexual abuse were mentioned as categories in an identical way. Moreover,

in 2002/2003, emotional neglect was mentioned as a separate category. Child abuse was defined as intentional violence towards the child, and neglect as not being properly taken care of. Subsequently, CHPs were asked how they managed the problem, including any referral. All participating professionals were required to attend a half-day training session about the categorizations and procedures to be used before they were allowed to participate; they received no additional training on the detection of child maltreatment specifically for this study.

The sociodemographic variables assessed were: sex, age, ethnicity, family composition, number of siblings living in the family at the time of study, degree of urbanization, parental education, income and employment status of the parent(s), and parental age. Employment was defined as either parent having a paid job. Educational level was defined as the highest degree completed by the father or mother. Urbanization was defined as living in a city (>250 thousand inhabitants) or not. Ethnicity was defined as non-Dutch if at least one parent was born outside the Netherlands. The categories involved are presented in Table 1.

Analyses

Analyses were restricted to the age categories of 3 years and 9 months and grades 2 and 5–8 of primary school (ages 5–6 and 8–12), except for additional analyses for factors increasing the likelihood of detection in 2002/2003. In the latter analysis, we also included children aged 14 months. We first assessed the rates of physical neglect, and physical, emotional, and sexual abuse in 1997/1998 and in 2002/2003, weighted to the entire population. Weighting was performed using the multivariable ratios of the proportion in the sample and the total population in terms of region, degree of urbanization of their district, and ethnicity. National data for this purpose were obtained from Statistics Netherlands (www.statline.nl). These data are based on the municipal population registers that exist throughout the country.

Next, we examined differences in overall rates of suspected maltreatment (including emotional neglect and abuse) in 2002/2003 by means of the included background characteristics and computed odds ratios for any maltreatment. For this part of the analysis, we constructed a logistic model with any maltreatment as the outcome, using stepwise forward selection of variables (threshold for inclusion: $p = .05$). We then computed mutually adjusted odds ratios for the selected characteristics.

Results

Trends in detection of suspected cases

Figure 1 shows that the mean rates of CHP-identified suspected cases of physical neglect, and physical, sexual and emotional abuse across all ages increased from .23% to .41% in this 5-year period, but differences were not statistically significant ($p = .19$; Chi-square test). The increases were mostly due to a quadrupling of suspected emotional abuse (from .06% to .24%), whereas other types of maltreatment did not essentially change. Figures for physical neglect were stable (.07% and .06%, respectively), increasing somewhat for physical abuse (from .00% to .06%) and decreasing somewhat for sexual abuse (from .10% to .05%). No difference was statistically significant (Chi-square tests).

Looking at separate ages, we again found no statistically significant differences regarding CHP-suspected cases of physical neglect, or for physical, sexual and emotional abuse. As a result, we will only be providing a summary description of these findings here. Detection rates were highest among children aged 5–6 years (.36% in 1997/1998 and .56% in 2002/2003). In both periods, suspected sexual abuse was only identified among children aged 5 and over. Physical abuse was only detected in age 6 and below, and only in 2002/2003. Emotional neglect, only registered in 2002/2003, was detected much more frequently than the other types of maltreatment in school-aged children (rates: 1.37% and 1.57% at ages 5–6 and 8–12; no cases in younger children).

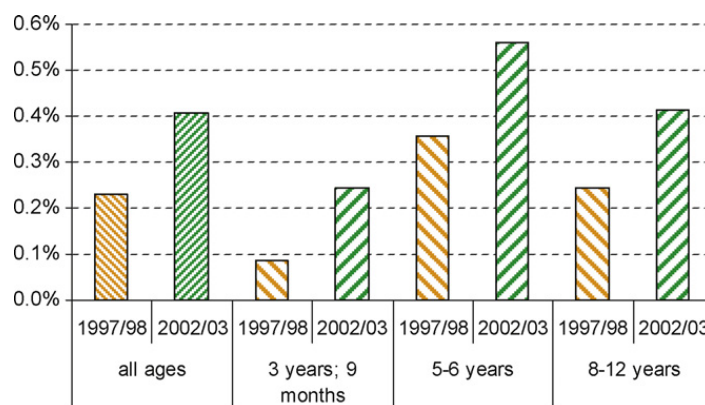


Figure 1. Rates for all abuse (physical, emotional or sexual) and for physical neglect combined, as found in Dutch national studies in 1997/1998 ($n = 3,781$) and 2002/2003 ($n = 3,607$).

Table 1

Prevalence rates for all suspected child maltreatment and odds ratios, crude and adjusted, for age and gender of the child, by background characteristics, in 2002/2003

	Prevalence		Crude OR	95% CI		<i>p</i> ^a	Adj. OR ^b	95% CI		<i>p</i> ^c
	Cases/ <i>n</i>	Rate (%)								
Gender										
Girl (reference)	46/2251	.6	1.00			<.0001	1.00			<.0001
Boy	13/2224	2.0	3.55	1.91	6.58		3.59	1.93	6.67	
Age										
14 months	2/872	.2	.11	.03	.44	.001	.10	.03	.44	.001
3 years and 9 months	1/783	.1	.06	.01	.43		.06	.01	.44	
5–6 years (reference)	32/1511	2.1	1.00				1.00			
8–12 years	24/1313	1.8	.86	.50	1.47		.87	.51	1.49	
Family composition										
Two-parent family (reference)	48/3206	1.2	1.00			.032	1.00			.18
One-parent family	8/368	2.2	1.85	.87	3.95		1.47	.69	3.15	
Other (adoption, foster family, biological parent and other partner)	3/53	5.7	5.00	1.51	16.59		3.62	1.07	12.22	
Employment										
At least one parent employed (reference)	52/3796	1.3	1.00			.69	1.00			.58
No parent employed	3/229	1.4	.96	.30	3.08		.75	.23	2.45	
Unknown	4/454	.9	.64	.23	1.78		.60	.22	1.69	
Educational level of mother										
High (17 years and over; reference)	8/1039	.8	1.00			.14	1.00			.33
Middle (13–16 years)	22/1583	1.4	1.82	.81	4.10		1.63	.73	3.64	
Low (12 years or less)	26/1770	1.5	1.92	.87	4.26		1.78	.79	4.03	
Unknown	3/87	3.4	4.60	1.20	17.67		3.29	.85	12.80	
Educational level of father										
High (17 years and over; reference)	9/1231	.7	1.00			.003	1.00			.015
Middle (13–16 years)	20/1384	1.4	1.99	.90	4.39		1.44	.65	3.20	
Low (12 years or less)	19/1556	1.2	1.68	.76	3.72		2.04	.92	4.51	
Unknown	11/308	3.6	5.03	2.07	12.25		3.91	1.93	9.60	
Family income										
Above poverty level (reference)	32/3110	1.0	1.00			.002	1.00			.013
Below poverty level	14/437	3.2	3.18	1.69	6.02		2.63	1.38	5.01	
Unknown	13/932	1.4	1.36	.71	2.60		1.30	.68	2.50	
Ethnicity ^d										
Dutch (reference)	43/3418	1.3	1.00			.69	1.00			.95
Former colony (Surinam/Neth. Antilles)	5/198	2.5	2.03	.80	5.19		1.38	.54	3.56	
Labor migrant (Turkish/Moroccan)	8/495	1.6	1.29	.60	2.76		.92	.43	1.99	
Other non-industrialized	2/246	.8	.64	.16	2.67		.60	.14	2.49	
Other industrialized	1/98	1.0	.81	.11	5.94		.80	.11	5.93	
Siblings										
None	8/985	.8	.53	.24	1.15	.27	.77	.35	1.70	.58
One (reference)	31/2024	1.5	1.00				1.00			
Two or more	20/1470	1.4	.89	.50	1.56		.76	.43	1.34	
Age of mother at birth of child										
Younger than 27	23/867	2.7	2.45	1.38	4.33	.001	2.12	1.19	3.77	.007
27–33 (reference)	25/2270	1.1	1.00				1.00			
34 and over	5/973	.5	.46	.18	1.22		.47	.18	1.24	
Unknown	6/369	1.6	1.48	.61	3.64		1.61	.65	3.99	
Age of father at birth of child										
Younger than 27	9/390	2.3	1.38	.66	2.91	.013	1.32	.62	2.80	.018
27–33 (reference)	33/1964	1.7	1.00	1.00			1.00			
34–40	6/1336	.4	.26	.11	.63		.28	.12	.67	
41 and over	2/297	.7	.40	.10	1.66		.37	.09	1.54	
Unknown	9/492	1.8	1.09	.52	2.29		1.14	.54	2.42	
Living area										
Rural/small city (reference)	40/3720	1.1	1.00			.002	1.00			.16
Big city	19/759	2.5	2.36	1.36	4.10		1.49	.85	2.62	
Total	59/4479	1.3								

^a *p*-value for the prediction of abuse out of this variable.

^b Adjusted for child age and gender.

^c *p*-value for the inclusion of this variable in a logistic model already including age and gender (as applicable).

^d Data for ethnicity were missing for 24 children; among them were no suspected cases.

Table 2Background characteristics that increase the likelihood of suspicion of any child maltreatment; odds ratios after mutual adjustment in 2002/2003 ($n = 4,479$)

	Mutually adjusted OR		95% CI	p^a
Gender				
Girl (reference)	1.00			
Boy	3.50	1.88	6.51	<.0001
Age				
14 months	.11	.03	.45	.001
3 years and 9 months	.06	.01	.46	
5–6 years (reference)	1.00			
8–12 years	.80	.47	1.38	
Educational level of father				
High (17 years and over; reference)	1.00			.043
Middle (13–16 years)	1.77	.79	3.93	
Low (12 years or less)	1.15	.51	2.60	
Unknown	3.04	1.22	7.62	
Age of mother at birth of child				
Younger than 27	1.98	1.10	3.55	.018
27–33 (reference)	1.00			
34 and over	.47	.18	1.25	

^a p -value for the inclusion of this variable in a logistic model already including the other variables.

Factors associated with detection

In 2002/2003 the detection of any maltreatment (neglect or abuse, including emotional) was much more likely among boys, older children, and children from families with an unclear structure, low-educated fathers or fathers of unknown educational level, and income below the poverty line, and mothers younger than 27 years of age at the birth of their child or fathers who were then 27–33 years of age (all $p < .05$, Chi-square tests; Table 1). In a multiple logistic regression model, only infant age and gender, maternal age at birth, and paternal educational level contributed to the prediction of maltreatment with statistical significance ($p < .05$; Chi-square tests) after mutual adjustment (Table 2). When excluding emotional neglect as the category that is most sensitive to differences in definition (May-Chahal & Cawson, 2005), the only statistically significant predictor was maternal age, with a high risk for mothers younger than 27 at the birth of their child (OR 3.39; 95% confidence interval 1.26–9.12).

Discussion and conclusion

Our study shows that little has changed in the detection of suspected physical and sexual maltreatment by Dutch CHPs over a 5-year period, despite the somewhat increased rates of suspected emotional abuse. Risk groups for any suspected maltreatment comprised older children, boys, and children of low-educated fathers and of fathers whose educational level was unknown, and of mothers who were relatively young.

Our data are based on professional assessments and as such they are subject to the biases present in any professional rating, in particular the differences in diagnostic skills and experience between them (Wiefferink et al., 2006). Detection of child maltreatment is notoriously difficult because the perpetrators try to hide their actions (Dubowitz & Bennett, 2007), thus undoubtedly increasing the interprofessional variability (Crume, DiGiuseppi, Byers, Sirotiak, & Garrett, 2002; Jenny & Isaac, 2006; May-Chahal & Cawson, 2005; Newton & Vandeven, 2005). However, as such our data reflect what professionals actually recognize in everyday practice. Most cases apparently concern emotional neglect, but we were unable to assess the trend in this regard. Moreover, non-responders and children without well-child visits may be expected to show higher rates of abuse (Gorey & Leslie, 1997; UNICEF, 2003), which would imply that our estimates are conservative. Similarly, some cases may have been missed through the use of the heading of psychosocial problems, though all CHPs were instructed to do so.

Our findings regarding groups with higher rates of suspected maltreatment mostly confirm previous studies (UNICEF, 2003; van Ijzendoorn et al., 2007), but our multivariable analyses indicate that parental age and educational level may be more important than family income and composition. Lack of information on the father's educational level may be interpreted as indicative of a difficult medical interview; its effect appears not to be due to the effect of one-parent families (results not shown). The higher rates of suspected maltreatment in older children contradict most earlier studies (Scher et al., 2004; UNICEF, 2003), however. One explanation may be that medical interviews are easier with older children, thus limiting under-detection among them somewhat. Regarding gender differences, some authors found higher rates among girls (Scher et al., 2004; UNICEF, 2003). However, Keenan et al. (2003) found a higher incidence of physical abuse among boys as well. Moreover, Crume et al. (2002) found a higher ascertainment rate of fatal abuse among girls, implying that underestimation may be higher in boys. And, finally, Scher et al. (2004) found higher prevalence rates of self-reported childhood maltreatment among males (40%) than among females (30%). In our community-based study with the assessment of all children done by

professionals, this ascertainment among boys may have been better. In any case, rates of detection remain low when compared to self-reported lifetime child abuse (UNICEF, 2003), and despite the launch of national guidelines in 2002 (Baeten, 2002). For instance, May-Chahal and Cawson (2005) reported rates of 7% for severe physical abuse, 6% for emotional abuse and 10% for sexual abuse in the UK. However, our figures are in the same range as the prevalence of abuse that was registered by a wide range of Dutch child health professionals and which was estimated to be 30/1,000 for ages 0–17 years combined (van IJzendoorn et al., 2007), with most of these cases involving neglect. It should be noted, though, that educational neglect was included in the latter figure. Finally, a recent Dutch study on lifetime abuse among adolescents aged 12–16 shows a prevalence of 8% for any sexual abuse, of 5% for any neglect, and over 1% for any physical abuse (Lamers-Winkelmann, Slot, Bijl, & Vijlbrief, 2007).

Our results imply that despite the increased attention paid to child maltreatment, as reflected in the issuing of guidelines for reporting during the second study period (Baeten, 2002), professionals have only detected emotional abuse at higher rates. This implies that detection of other types of child maltreatment is still in need of improvement, a problem acknowledged worldwide (Jenny & Isaac, 2006; Newton & Vandeven, 2005). Better training of professionals working in preventive child-healthcare in terms of identification of and guidelines for the identification of child abuse (Baeten, 2002) might help resolve this, as well as employing other means of detection such as emergency care departments (Trowbridge et al., 2005). Additional studies are needed to assess the effectiveness of these policies, as well as that of subsequent interventions (Barlow & Stewart-Brown, 2005; Macmillan et al., 2005; Newton & Vandeven, 2005). International cooperation, including learning from best practices along with their relative contributions, may be one way of reaching this goal and of protecting child health better.

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